



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,234	02/18/2004	John M. Gascoyne	12506US06	2366
23446 7590 06/11/2008 MCANDREWS HELD & MALLOY, LTD 500 WEST MADISON STREET SUITE 3400 CHICAGO, IL 60661				
EXAMINER				
HODGE, ROBERT W				
ART UNIT		PAPER NUMBER		
1795				
MAIL DATE		DELIVERY MODE		
06/11/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/781,234

**Applicant(s)**

GASCOYNE ET AL.

**Examiner**

ROBERT HODGE

**Art Unit**

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 April 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 16, 25, 29, 31, 33, 36 and 37 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 16, 25, 29, 31, 33, 36 and 37 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SB/888)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/2/08 has been entered.

### ***Response to Arguments***

Applicant's arguments, see Remarks, filed 4/2/08, with respect to the rejection of claims 25, 29, 31 and 33 under 35 U.S.C. 112, second paragraph have been fully considered and are persuasive. The rejection of claims 25, 29, 31 and 33 under 35 U.S.C. 112, second paragraph has been withdrawn.

The remainder of applicant's arguments filed 4/2/08 have been fully considered but they are not persuasive. Applicants' arguments are still not commensurate with the scope of the claims, applicants continue to argue that Cabasso does not teach a "sacrificial carbon", which is not recited in any of the claims. Applicants also argue product-by-process limitations. Applicants should be aware that in a product by process claim, applicants must show that the process materially alters the product to overcome a rejection made on the product by the prior art, which show the product is known. Furthermore Cabasso does in fact teach mixtures of carbon materials, see column 7,

line 35, which will include at least two separate carbon materials, which is the inherent nature of a mixture. Applicants' further argue that Cabasso does not mention the problem of carbon corrosion. Cabasso teaches carbon materials that have particular BET surface areas that fall within the ranges of the instant claims and therefore the property of carbon corrosion is inherently present see MPEP 2112 below:

**I. SOMETHING WHICH IS OLD DOES NOT BECOME PATENTABLE  
UPON THE DIS-COVERY OF A NEW PROPERTY**

"[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). >In *In re Crish*, 393 F.3d 1253, 1258, 73 USPQ2d 1364, 1368 (Fed. Cir. 2004), the court held that the claimed promoter sequence obtained by sequencing a prior art plasmid that was not previously sequenced was anticipated by the prior art plasmid which necessarily possessed the same DNA sequence as the claimed oligonucleotides. The court stated that "just as the discovery of properties of a known material does not make it novel, the identification and characterization of a prior art material also does not make it novel." *Id.*< See also MPEP § 2112.01 with regard to inherency and product-by-process claims and MPEP § 2141.02 with regard to inherency and rejections under 35 U.S.C. 103.

## II. INHERENT FEATURE NEED NOT BE RECOGNIZED AT THE TIME OF THE INVENTION

There is no requirement that a person of ordinary skill in the art would have recognized the inherent disclosure *at the time of invention*, but only that the subject matter is in fact inherent in the prior art reference. *Schering Corp. v. Geneva Pharm. Inc.*, 339 F.3d 1373, 1377, 67 USPQ2d 1664, 1668 (Fed. Cir. 2003) (rejecting the contention that inherent anticipation requires recognition by a person of ordinary skill in the art before the critical date and allowing expert testimony with respect to post-critical date clinical trials to show inherency); see also *Toro Co. v. Deere & Co.*, 355 F.3d 1313, 1320, 69 USPQ2d 1584, 1590 (Fed. Cir. 2004) (“[T]he fact that a characteristic is a necessary feature or result of a prior-art embodiment (that is itself sufficiently described and enabled) is enough for inherent anticipation, even if that fact was unknown at the time of the prior invention.”); *Abbott Labs v. Geneva Pharms., Inc.*, 182 F.3d 1315, 1319, 51 USPQ2d 1307, 1310 (Fed. Cir. 1999) (“If a product that is offered for sale inherently possesses each of the limitations of the claims, then the invention is on sale, whether or not the parties to the transaction recognize that the product possesses the claimed

characteristics.”); *Atlas Powder Co. v. Ireco, Inc.*, 190 F.3d 1342, 1348-49 (Fed. Cir. 1999) (“Because sufficient aeration’ was inherent in the prior art, it is irrelevant that the prior art did not recognize the key aspect of [the] invention.... An inherent structure, composition, or function is not necessarily known.”); *SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1343-44, 74 USPQ2d 1398, 1406-07 (Fed. Cir. 2005) (holding that a prior art patent to an anhydrous form of a compound “inherently” anticipated the claimed hemihydrate form of the compound because practicing the process in the prior art to manufacture the anhydrous compound “inherently results in at least trace amounts of” the claimed hemihydrate even if the prior art did not discuss or recognize the hemihydrate).<

The Examiner acknowledges that claims 1-15, 17-24, 26-28, 30, 32, 34 and 35 have been canceled.

***Claim Rejections - 35 USC § 102/103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 16, 25, 29, 31, 33, 36 and 37 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 5,783,325 hereinafter Cabasso.

With respect to claims 16, 25, 29, 31 and 33, Cabasso et al. teach a fuel cell anode structure comprising a substrate that is a gas diffusion layer (Column 6, Lines 34-35) and a carbon-based component comprising carbon blacks selected from the groups consisting of BLACK PEARLS 2000, Vulcan VX-72, KETJEN BLACK EC 300J, activated charcoal, Acetylene Black C-100, **or mixtures thereof**. See Column 6, Lines 36-58; Column 7, Lines 21-44. The BLACK PEARLS 2000 carbon material has a surface area of 1536 m<sup>2</sup>/g as disclosed in the instant specification. See Page 31. The Vulcan VX-72 carbon material has a surface area of 200 m<sup>2</sup>/g. See Example 1. The KETJEN BLACK EC 300J carbon material has a surface area of 950 m<sup>2</sup>/g. See Column 7, Lines 36-40. The activated charcoal typically has a surface area between 1000-1270 m<sup>2</sup>/g as evidenced by Yamaura et al. (U.S. 6,824,908) and Hirashige (U.S. 2005/0214631 A1). The Acetylene Black C-100 carbon material has a surface area of 60 m<sup>2</sup>/g. See Example 4. It is the position of the examiner that the probability of having a first carbon material having a BET surface area of at least 350 m<sup>2</sup>/g, such as BLACK PEARLS 2000, KETJEN BLACK EC 300J or activated Charcoal, and a second carbon material, such as Vulcan VX-72 or Acetylene Black C-100 based on the teaching of

Art Unit: 1795

Cabasso et al. does not constitute as "picking and choosing" because the groups for the mixture of two carbon materials are relatively small. Cabasso et al. further teach a catalyst layer ink solution is painted onto the gas diffusion electrode. See Column 10, Lines 9-24

Furthermore, Cabasso et al. do not specifically disclose the relative corrosion resistance during cell reversal at fuel cell operating temperatures. However, it is the position of the examiner that such properties are inherent, given that both Cabasso et al. and the present application utilize the same carbon compounds. A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature *is necessarily present in that which is described in the reference.* In re Robertson, 49 USPQ2d 1949 (1999).

Regarding claims 36 and 37 Cabasso teaches a third carbon material in addition to the mixture of carbon black materials as discussed above that is present within the gas diffusion layer which can be a carbon conductive substrate that is a fibrous or porous sheet such as carbon paper, high conducting carbon cloth, high conducting carbon felt, carbon tape and other suitable carbon substrate materials (column 6, lines 33-64).

The examiner notes that claims 16, 25, 36 and 37 are product-by-process claims. "Product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps". See MPEP § 2113. Therefore because all of the structure recited in claims 16, 25, 36 and 37 is present in the Cabasso reference, claims 16, 25, 36 and 37 are included in the above 102(b)/103(a) rejection. As a

Art Unit: 1795

practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith." In re Brown, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

In the alternative it would have been obvious to one having ordinary skill in the art at the time the invention was made to mix the two carbon components of Cabasso as already suggested by Cabasso, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. Howard v. Detroit Stove Works, 150 U.S. 164 (1893). It further would have been obvious to one having ordinary skill in the art at the time the invention was made that the carbon materials of Cabasso will inherently have the same properties as the instantly claimed invention. In re Robertson, 49 USPQ2d 1949 (1999).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HODGE whose telephone number is (571)272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 1795

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert Hodge/  
Examiner, Art Unit 1795